UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,252	12/28/2001	Sung Hyuk Hong	K-0370	5028

34610 7590 05/11/2009

KED & ASSOCIATES, LLP
P.O. Box 221200
Chantilly, VA 20153-1200

EXAMINER	
JAIN, RAJ K	
ART UNIT	PAPER NUMBER
2416	
MAIL DATE	DELIVERY MODE
05/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/029,252	HONG, SUNG HYUK	
	Examiner	Art Unit	
	RAJ JAIN	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 5-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 5-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 1, 2 and 16 are objected to because of the following informalities: Suggest amending the subject claims 1 and 16 as follows;

1. (Currently Amended) A method for forward transmission comprising:

Processing, by a server, a present data frame to be transmitted, the present data frame comprising:

a header subframe containing frame mapping information of data to be transmitted to a plurality of terminals;

data subframes containing data multiplexed therein, ~~and~~ to be transmitted to the plurality of terminals at a present time in correspondence to frame mapping information transmitted in a frame in advance of the header subframe of the present frame, wherein the frame mapping information transmitted in the frame in advance of the header subframe of the present frame includes a header subframe having subframe numbers arranged in an order to correspond to positions of the corresponding multiplexed data subframes in the present frame and the frame in advance additionally includes data subframes following the header subframe,

wherein the frame mapping information transmitted in the frame in advance of the present frame includes the subframe numbers transmitted 'n' frames before the present frame in succession, and the multiplexed data subframes are positioned in the present frame according to an order of transmission of the subframe numbers that is transmitted in the frame in advance of the present frame and transmitting the present data frame to at least one of the plurality of terminals; and

performing decoding of the present frame at the at least one of the plurality of terminals.

16. (Currently Amended) A method for forward transmission of a data, the method comprising:

(a) processing, by a server, data to be transmitted at a present time to form a present frame having data subframes;

(b) multiplexing the formed data subframes of the present frame according to subframe mapping information that is transmitted to a plurality of terminals in a frame in advance of the present frame, wherein the frame in advance of the present frame includes a header subframe having subframe numbers corresponding to the subframe mapping information, and a plurality of data subframes that follow the header subframe of the frame in advance;

(c) transmitting, to the plurality of terminals, the multiplexed data subframes of the present frame together with subframe mapping information of the data subframes to be transmitted after transmitting the present frame, wherein the subframe mapping information includes subframe numbers in an order to correspond to positions of formed data subframes to be transmitted after the present frame in a subsequent frame; and

(d) performing decoding of the present frame at one of the plurality of terminals.

Claim 2, recommend deleting the claim as the limitation is already recited in the independent claim 1.

Appropriate correction is required.

Specification

The disclosure is objected to because of the following informalities: Suggest amending the specification as follows;

[0034] A number of SFNs in the address bits of the header subframe is as many as a number of data subframes included in the CFSCH, and, as shown in FIG. 3, each of the SFNs has respective data subframes mapped thereto in succession in one to one fashion, in other words, according to an order of transmission of the SFNs transmitted 'n' frames before, the data subframes transmitted thereafter are multiplexed positioned in a frame. The data subframes may be multiplexed according to an order of generation and/or an order of formation. Alternatively, the data subframes may be multiplexed in the present frame according to priorities of terminals. Additionally the data subframes may be encoded in codes only relevant terminals know.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 24 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim recites here in part "…transmitting a previous frame to a plurality, of terminals; processing data to be transmitted in a present frame that follows the previous frame..". The specification fails to disclose "transmitting a previous frame to a plurality" and than a present frame that follows the previous frame. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2 and 5-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wasilewski et al (US 005319707A) in view of Deluca et al (USP 5,128,665) and further in view of Segarra et al (USP 4,430,699 A).

Regarding claims 1, 16 and 24, Wasilewski discloses a method and apparatus for forward transmission (see Fig. 1, abstract, transmitter 18 for forward transmission) comprising:

processing a present data frame to be transmitted (Fig. 1, encoder 16 processes data to be transmitted, see col 5 lines 54-60.) the present data frame comprising:

- a header subframe containing frame mapping information of data to be transmitted to a plurality of terminals (see Fig. 15, col 24 lines 27- 40 each subframe vcm contains a header 288 followed by plurality of subframe virtual channel map definitions that specifies a particular virtual channel number for the subscriber to select via appropriate decoders.); and,

-data subframes containing data multiplexed therein, and to be transmitted to a plurality of terminals at the present time in correspondence to frame mapping information transmitted in a frame in advance of the header subframe of the present frame, wherein the frame mapping information transmitted in the frame in advance of the header subframe of the present fame includes subframe numbers (see col 3 lines 14-17; Figs. 1 and 2, col 6 lines 39-50; a subframe of data streams is multiplexed at the encoder 16 for transmission, each subframe data is mapped which is transmitted in advance (Fig. 4) to the receiver prior to actual data arriving so there is minimum delay in processing; Fig. 19(a) illustrates a data subframe, with different data types transmitted in advance see col 29 lines 10 – 65). Wsilewski further discloses wherein the mapping information is transmitted in the frame in advance of the present frame transmitted "n" frames before the present frame (See Fig. 13 mapping info transmitted in advance of the present frame).

Wasilewski however fails to disclose subframes arranged in a specific order to correspond to positions of corresponding multiplexed sub frames.

Deluca discloses a message structure (superframe) which comprises multiple packets (subframes) (Fig. 1). In the address field in Delucas system, the address signal numbers 1-L are arranged in a specific order to correspond to positions of the corresponding packets 1-L (subframes) in the message (superframe). This simple mechanism enables the receiver to quickly detect the appropriate packet based on the position of the address signal number. Thus, it would have been obvious to one skilled in the art at the time the invention was made to apply Delucas teaching of arranging address signal numbers in a specific order to correspond to positions of the

corresponding packets 1-L (subframes) in the message (superframe) in Wasilewski with the motivation being to provide a simple mechanism to enable the receiver to quickly detect the appropriate frame based on the position of the subframe number.

Both Wasilewski and Delucas explicitly fail to disclose transmitting the sub frames in advance of the header subframe.

Segarra discloses transmitting the sub frames in advance of the header subframe (Fig. 15; col 27ines 50-60). Transmission of the subframe numbering in advance allows for proper reassembly of the message frame at the receiving device without delay. Thus it would have been obvious at the time the invention was made to incorporate the teachings of Segarra within Wasilewski and Delucas so as to enhance overall network performance by having the receiver knowledge of incoming sub frames so as to allow for quick reassembly without delay.

Regarding claim(s) 2, 14, Segarra discloses transmitting the sub frames in advance of the header subframe (Fig. 15; col 27ines 50-60).
Transmission of the subframe numbering in advance allows for proper reassembly of the message frame at the receiving device without delay. Thus it would have been obvious at the time the invention was made to incorporate the teachings of Segarra within Wasilewski and Delucas so as to enhance overall network performance by having the receiver knowledge of incoming sub frames so as to allow for quick reassembly without delay.

Regarding claim(s) 5, 6 and 26, Wasilewski discloses wherein the header subframe contains data subframe numbers, frame quality indicator, and reserved/encoder tail information (see Fig. 15, col 24 lines 27- 40 Wasilewski discloses a generic subframe vcm which contains a header 288 followed by plurality of subframe virtual channel map definitions that specifies a particular virtual channel number for the subscriber to select via appropriate decoders, furthermore, it is inherent that the header subframe contains SFN, frame quality indicators and reserved/endoder tail information as admitted by applicant's prior art Fig.1).

Regarding claims 7, 8, 15, 21 and 22, Wasilewski discloses encoded subframes that are inherently coded and scrambled (see Fig. 1 decoder 36, col 3 lines 34-50, the

codes are scrambled to differentiate users receiving the spectrum of information as broadcast by the transmitter)

Regarding claims 9, 10, 19 and 20 Wasilewski discloses multiplexed data stream (see Fig. 2, and abstract, encoder 16 (Fig. 1) illustrates data multiplexed prior to transmission.)

Regarding claims 11, 17, Wasilewski discloses data interleaving, encoding and scrambling (see Figs 3a and 12a.).

Regarding claim 12, Wasilewski discloses data transmission to plurality of terminals (see Fig.1), power supply to turn on or off data transmission is inherent to the invention.

Regarding claim 13, Wasilewski discloses broadcasting to all terminals ((see Fig.1, single transmitter 23 broadcasting to plurality of receivers 20, 24),

Regarding claim 18, Wasilewski discloses an encoder 36 (Fig. 1) that performs data and subframe information extraction (see col 3 lines 34-50.)

Regarding claim 24, Wasilewski discloses scalable or flexible data transmission rate based on transmission medium characteristics (see col 2 lines 7-20, col 11 lines 14-25.).

Regarding claims 18 and 25, Wasilewski discloses transmitting the mapping information at least 1 frame in advance and information on positions of the multiplexed data in the frame transmitted (see Fig. 19a col 29 lines 30-47, col 3 lines 14-17, col 7 lines 60-67, a subframe of data streams once formed is multiplexed at the encoder 16 of Fig. 1 for transmission, furthermore each subframe data is mapped which is transmitted in advance to the receiver so that it may be ready for decoding prior to actual data arriving so there is minimum delay in processing the received data).

Response to Arguments

Applicant's arguments with respect to claims 1, 2 and 5-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJ JAIN whose telephone number is (571)272-3145. The examiner can normally be reached on M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raj Jain/
Examiner, Art Unit 2416